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09/410,896	10/02/99	SHIH	C 67.200-207

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QM02/0523

EXAMINER

CIRIC, L

ART UNIT	PAPER NUMBER
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3743

DATE MAILED: 05/23/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.
09/410,896

Applicant(s)
Shih

Examiner
Ljiljana V. Ciric *LVC*

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Mar 12, 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 8-10, and 12-20 is/are pending in the application.
- 4a) Of the above, claim(s) none is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 8-10, and 12-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other:

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DETAILED ACTION

Response to Amendment

1. This Office action is in response to the amendment and arguments filed on March 12, 2001.

Claims 1 through 3, 5, 8 through 10, and 12 through 20 remain in the application.

Response to Arguments

2. Applicant's arguments filed on March 12, 2001 have been fully considered but they are not persuasive.

In response to applicant's arguments regarding the criticality of the groove dimensions, the examiner respectfully notes that arguments or conclusory statements unsupported by factual evidence are insufficient to establish unexpected results. See In re Lindner, 173 USPQ 356 (CCPA 1972). In fact, the portions of the instant specification cited as evidence of criticality and of unexpected results, instead of stating that the groove dimensions must be within the claimed ranges, merely state that the groove dimensions "*may be*" within these ranges. The cited portions of the specification also do not even establish a clear correlation between the groove *dimensions* per se and the merits of the invention.

The examiner also respectfully notes that applicant's argument that the Moslehi reference does not teach, disclose, or suggest the combination of at least three circular grooves and at least

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two linear grooves is not valid, as evidenced by Figure 3 of the Moslehi reference and as described in greater detail in paragraph 10 below.

Applicant's arguments with regard to claims 16 through 20 fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Applicant's arguments with regard to claims 16 through 20 also fail to comply with 37 CFR 1.111© because they do not clearly point out the patentable novelty which he or she thinks that claims 16 through 20 present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

Drawings

3. In order to avoid abandonment, the drawing informalities noted on the PTO-948 form in Paper No. 2, mailed on December 19, 2000, **must** now be corrected.

Specification

4. The amended abstract of the disclosure is objected to because it does not avoid redundant terminology, such as "are disclosed" in line 4. Note that the first sentence of the abstract does not have to be a complete sentence and the term "are disclosed" may merely be deleted in order to comply with this requirement. Correction is required. See MPEP § 608.01(b).

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5. The disclosure is objected to because of the following informalities, for example: "groove" [page 6, line 13] should be replaced with "grooved"; and, a comma (,) should be inserted immediately following the exemplary temperature listed on line 15 of page 11 for grammatical correctness.

Appropriate correction is required.

Claim Objections

6. Claims 2, 3, 16 through 20 are objected to because of the following informalities: "at least 3" [claim 2, line 2; claim 3, line 2; claim 9, line 2; claim 10, line 2; claim 18, line 3] should be written out as "at least three"; "at least 2" [claim 2, line 2; claim 9, line 2;] should be written out as "at least two"; "at least 5" [claim 3, line 2; claim 10, line 2; claim 18, line 2] should be written out as "at least five"; "cooling" [claim 16, line 10] should be replaced with "to cool" or with "for cooling" for improved clarity and grammatical correctness; "9 circular grooves and 3 linear grooves" [claim 19, line 2] should be written out as "nine circular grooves and three linear grooves"; and "flown" [claim 20, line 2] should be replaced with "flowing" for improved grammatical correctness. Appropriate correction is required.

Claim Rejections - 35 U.S.C. § 112

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 3, 5, 9, 10, 12, and 17 through 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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With regard to claims 3, 5, 10, 12, and 18, the term “preferably” appearing in each of these claims renders each of these claims indefinite with regard to the metes and bounds of protection sought.

With regard to claims 9 and 10, it is not clear whether the grooves recited therein are the same as, or in addition to, those previously recited in base claim 8, thereby rendering the claims indefinite with regard to the scope of protection sought.

With regard to claim 17 as written, there is a discrepancy between the preamble and the limitations in the body of each claim, in that it is not clear whether the intended metes and bounds of protection sought encompass the subcombination of a wafer pedestal as recited in the preamble of base claim 16 and all depending claims, or whether these encompass the combination of a such a wafer pedestal together with a cool-down chamber and the sputter chambers as recited in the body of claim 17.

With regard to claims 18 and 19, it is not clear whether the grooves recited therein are the same as, or in addition to, those previously recited in base claim 16, thereby rendering the claims indefinite with regard to the scope of protection sought.

The above is an indicative, but not necessarily an exhaustive, list of 35 U.S.C. 112, second paragraph, problems. Applicant is therefore advised to carefully review all of the claims for additional problems. Correction is required of all of the 35 U.S.C. 112, second paragraph problems, whether or not these were particularly pointed out above.

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Claim Rejections - 35 U.S.C. § 102

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claims 16, 17 (as best can be understood in view of the indefiniteness thereof), and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Moslehi.

Moslehi discloses the invention essentially as claimed, including a semiconductor substrate characterized by at least three circular concentric grooves 88 and by at least two linear radial grooves 90 enabling cooling. See Figure 3, for example.

The reference thus reads on the claims.

Claim Rejections - 35 U.S.C. § 103

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. As best can be understood in view of the indefiniteness some of the claims as noted in paragraph 8 above, claims 1 through 3, 5, 8 through 10, 12 through 15, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moslehi.

As indicated in greater detail above, Moslehi discloses the invention essentially as claimed, including a plurality of circular concentric grooves 88 and a plurality of linear radial grooves 90 [i.e., Figure 3 and column 7, lines 3-9], but does not specify the dimensions of the grooves 88 and 90 to be any specific value nor does it specifically show more than three circular grooves 88. Nevertheless, barring a showing of unexpected results, it is not inventive to merely optimize the

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size of an element, such as the width and depth of each of the grooves in the instant case, nor to duplicate parts for a multiplied effect. See In re Reven, 156 USPQ 679 (CCPA 1968). Also see St. Regis Paper Co. v. Bemis Co., Inc., 193 USPQ 8, 11 (7th Cir. 1977).

Thus, it would have been obvious to one skilled in the art at the time of the invention to modify the number and the size of the grooves of the substrate of Moslehi in order to, for example, best meet given cooling needs for wafers corresponding to given manufacturing conditions.

Conclusion

13. The following additional prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Flanigan et al. [especially Figure 2] discloses a semiconductor workpiece processing apparatus including a cooling plate having a grooved top surface including a plurality of both concentric and radial grooves.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ljiljana (Lil) V. Ciric, whose telephone number is (703) 308-3925.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus, can be reached on (703) 308-1935. The fax phone number is (703) 305-3463.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

lvc

LVC

May 21, 2001

Ljiljana V. Ciric
LJILJANA CIRIC
PATENT EXAMINER